VALIDATION/ACCEPTANCE FOR AN EARNED VALUE MANAGEMENT SYSTEM (EVMS)

Earned Value Management is a tool that allows both Government and Supplier Program Managers to have visibility into cost, schedule, and technical progress on their contracts to measure and manage performance. No single Earned Value Management System (EVMS) can meet every management need for performance measurement. The industry guidelines establish the framework within which an adequate integrated cost/schedule/technical management system will fit. The guidelines do not describe a system, however industry in recognizing the importance of earned value in program management, has developed an industry based standard, "Earned Value Management System Guidelines" for applying earned value. The 32 guidelines from this industry standard have become the Department of Defense (DOD) baseline for Earned Value Management Systems.

In designing, implementing and improving the EVMS, the objective should be to do what makes sense. An EVMS that complies with the intent of the guidelines will facilitate inherent features of a good EVMS. Some of these features are thorough planning, timely based establishment and control, and information broken down by product and organization. Other features are objective measurements of accomplishment against the plan at levels where the work is performed, summarized reporting to higher management for use in decision making, reporting discipline, and the implementation of management actions to mitigate risk and manage cost and schedule performance.

The responsibility for developing and applying the specific procedures for complying with these guidelines is vested in the contractor or Government personnel applying earned value management to Government contracts. The proposed supplier's EVMS is subject to Government acceptance. DCMC, as the assigned DOD Executive Agent is responsible for ensuring the effective implementation and coordination of earned value management within DOD. If the DOD Executive Agent has not previously accepted a proposed system, the description of the proposed system must be in sufficient detail to show how it complies with the guidelines. Specifically, it should describe the EVMS and its application with respect to organization of the work, planning, budgeting, scheduling, work authorization, cost accumulation, measurement and reporting of cost and schedule performance, variance analysis and baseline control.

The 32 guidelines are grouped into 5 sections that are further regrouped to facilitate a process approach of nine processes:

ORGANIZING: The organizing process is concerned principally with: ensuring that each part of the EVMS is properly established; defining the work required to be performed; assigning the tasks to organizations responsible for performing the work, including major subcontractors; facilitating the collection and developing of information for management purposes; and identifying organizational resources that facilitate the preparation of accurate and timely estimates of project cost and schedule completion.

SCHEDULING: **The scheduling process defines the schedule hierarchy that must be established to ensure proper, effective planning, and statusing of all effort on the project..**

WORK/BUDGET AUTHORIZATION: **This process addresses the requirements for the project organization to integrate budget and work planning requirements with the program schedules to ensure completion of contractual efforts.**

ACCOUNTING: **The accounting system structure is defined by the suppliers Cost Accounting Standards Disclosure Statement. The intent is to ensure there is a timely and accurate transfer of actual cost information from the accounting system into the EVMS.**

INDIRECT MANAGEMENT: **This process pulls together those requirements that apply to the suppliers processes of establishing, implementing, controlling, and evaluating indirect budgets and costs that are incurred and allocated to the individual projects. Since indirect costs are normally handled in organizations that are not project peculiar, there should be some method for assigning the appropriate values for indirect budgets and actuals to all affected projects.**

MANAGERIAL ANALYSIS: **This process is the evaluation and feedback loop of the EVMS. Management actions are determined based on lower level analysis of problems, corrective actions are implemented, and there effect on cost and schedule performance are projected.**

CHANGE INCORPORATION: **Changes in major projects are inevitable. This process addresses the controlled processes whereby projects incorporate formal changes, conduct internal replanning, and adjust past, present, and future information to accommodate changes. The keys are timeliness and control.**

MATERIAL MANAGEMENT: **This process expands on the application of performance measurement to both development and production material.**

SUBCONTRACT MANAGEMENT: **This process expands on the application of performance measurement to subcontracted efforts. Only those aspects unique to managing subcontracts are covered.**

These nine processes are further broken down into approximately 60 sub-processes, all of which must be reviewed and accepted, before the DOD Executive Agent can accept an EVMS.

An incremental approach is encouraged for the acceptance review to limit expense while still satisfying the guideline requirements. Compliance/Acceptance evaluations will maximize the supplier EVMS involvement through a suitable self-evaluation process prior to requesting the formal review. An Integrated Baseline Review (IBR) will be conducted within

six months of a contract award to verify the technical content of the performance measurement baseline (PMB) and the accuracy of the related resources (budgets) and schedules. The IBR will help to seek a mutual understanding of and agreement to the organization and planning sections for contract execution. During the IBR, many of the guidelines can be evaluated with an additional team of 4-5 members for 3-4 days. Additional reviews will be planned as the supplier's EVMS is readied to evaluate the guidelines that were not part of the IBR process, such as the Analysis Section (4-5 members for 3-4 days) and the Revision Section (3-4 members for 3-4 days).
Arrangements must be made with DCAA to evaluate the accounting guidelines. The DCAA evaluations are generally concurrent with the other reviews but accomplishment must be completed before the system can be accepted. The entire process to evaluate all 32 Guidelines has been known to last up to 12-18 months, however normally a much shorter time period can be expected.

DCAA GUIDELINE ACCEPTANCE PARTICIPATION

Defense Contract Audit Agency (DCAA) participation in the system surveillance will be in accordance with the Defense Contract Audit Manual (DCAM - Latest Edition), paragraphs 1-403.1, 1-403.2, 5.506.1, 11-301 through 11-306, and the Earned Value Management Implementation Guide, Part 2, Section 3. DCAA's support of the system surveillance program will include such activities as:

1. **Reviewing the supplier's accounting system for compliance with the criteria (industry guidelines) and contract provisions, including verification that there is consistency between related budgeting and work authorization systems.**

2. **Determining the accuracy and reliability of the financial data contained in the contract cost reports prepared from the supplier's systems.**

3. **Continuous evaluation of the effectiveness of the supplier's policies and procedures and performance of selected tests to determine the validity of reported data.**

4. **Reporting significant unresolved deficiencies to the DCMC Earned Value Management System (EVMS) Monitor.**

5. **Incorporating the appropriate EVMS surveillance requirements into routine audit programs and procedures.**

6. **Advising the DCMC EVMS Monitor regarding DCAA audits of the supplier's system, which may bear on the acceptability of the earned value management system.**

Indirect Management: Those requirements that apply to the supplier's process of establishing, implementing, controlling and evaluating indirect budgets and costs that are incurred and allocated to the individual projects. Since indirect costs are normally handled in organizations that are not project peculiar, there should be some method for assigning the appropriate values for indirect budgets and actual costs to all affected projects.

The DCAA evaluations of the accounting industry guidelines/processes marked (DCAA) are generally concurrent with other reviews and shall be accomplished and completed before the supplier's EVMS system can be accepted.

The following is guidance in evaluating the industry guidelines/processes:

Guideline #1 - ORGANIZATION, Process Group - Organizing:

Define the authorized work elements for the program. A work breakdown structure (WBS), tailored for effective internal management control, is commonly used in this process.

Defining the Work: The statement of work for the project should reflect all work to be performed. A critical aspect is to establish the organizational responsibility for segments of the work and to define in-house effort versus subcontracted effort. The WBS established for the project should not be extended to unreasonably low levels, since this could affect management flexibility.

Documents to Review: CWBS and Dictionary, if applicable, Contract Statement of Work, Work Authorizations Documents.

1. **A comprehensive statement of work (SOW) defining project work requirements is prepared.**

2. **Correlation between the SOW and the WBS assigning segments of work to appropriate WBS elements.**

3. **A WBS dictionary will capture this correlation.**

Guideline #2 - ORGANIZATION, Process Groups - Organizing and Subcontract Management:

Identify the program organizational structure including the major subcontractors responsible for accomplishing the authorized work, and define the organizational elements in which work will be planned and controlled.

Assigning Organizational Responsibility: The organizational breakdown structure (OBS) reflects the way the project is functionally organized. To assign work responsibility to appropriate organizational elements, any WBS and OBS must be interrelated with each other; that is, organizational responsibility must be established for identified units of work. The assignment of lower level work segments to responsible lower level managers provides a key control point for management purposes and cost collection. This is called the control account (CA).

Establish Subcontract Management Organizations: **When effort is to be subcontracted out, the applicable subcontractor is identified and related to the appropriate WBS element and/or organization charged with acquiring the subcontracted item. When designating the internal organization responsible for managing subcontracted efforts, the prime contractor must assign a manager with sufficient authority and responsibility to be able to ensure the subcontractor will perform to the terms and conditions of the project. This person should have all the same responsibilities as other control account managers within the program organization.**

Documents to Review: **CWBS and Dictionary, if applicable, Contractor Organization Charts.**

1. **Early identification of a program organization structured for efficient execution of the project work efforts.**

2. **Integration of the major subcontractors into the project structure.**

3. **The project will identify the appropriate organization with responsibility for managing the performance of the major subcontractors.**

4. **Major subcontractors will be identified to a scope of work and its related WBS elements.**

Guideline #3 - ORGANIZATION, Process Group - Organizing:

Provide for the integration of the supplier's planning, scheduling, work authorization, budgeting and cost accumulation processes with each other, and as appropriate, the program WBS and OBS.

Ensure Management Subsystems Integration: **The control account is the main action point for planning and control of effort. All aspects of the system come together at this point including budgets, schedules, work assignments, cost collection, progress assessment, problem identification, and corrective actions. Most management actions taken occur as a result of significant problems identified at this level. The control account levels should be determined by the scope of the management tasks. The proper levels should not simply be an arbitrary determination or the result of one "across-the-board" level for control accounts. Control accounts are usually located at levels consistent with the project's method of management.**

Documents to Review: **Internal Performance Measurement Reports.**

1. **Integration of the various subsystems into an EVMS which provides timely and valid project information to management.**

2. **Establishment of control accounts at the appropriate organizational level, optimized for efficient project management.**

Guideline #4 (DCAA) - ORGANIZATION, Process Group - Indirect Management:

Identify the supplier's organization or function responsible for controlling overhead (indirect costs).

Assign Managerial Responsibility for Indirect Cost: **The supplier establishes an indirect budgeting process which includes the formal assignment of duties and limits of responsibility, a description of the indirect system, and policies and procedures applicable to the establishment and control of indirect costs. Assignment and control of indirect resources must be clearly defined and should be commensurate with the authority to approve or avoid the expenditure of resources.**

Documents to Review: **Organization charts, Overhead budgeting policies and procedures.**

1. **Managerial positions responsible for establishing and controlling indirect budgets are clearly identified in the supplier's organizational structure.**

2. **The responsibilities and authorities are clearly described.**

Guideline #5 - ORGANIZATION, Process Group - Organizing:

Provide for the integration of the program WBS and OBS in a manner that permits cost and schedule performance measurement by elements of either or both structures as needed.

Organize for Effective Performance Measurement: **The control account in an EVMS is the lowest levels in the structure at which the comparison of actual costs to planned budgets and earned value are required. The cost collection point must be at a level, which will identify the cost elements and factors contributing to cost and/or schedule variances. Managerial authority and responsibility for corrective action should exist at the control account level making it the key management control point in the system.**

Documents to Review: **Internal Performance Measurement Reports, Manufacturing Breakdown Structure, if applicable, CWBS.**

1. **Defines control accounts in terms of organizational versus WBS responsibility and establishes manageable subdivisions of the project effort.**

2. **Provides earned value information at this level for effective resource planning.**

Guideline #6 - PLANNING & BUDGETING, Process Group - Scheduling:

Schedule the authorized work in a manner that describes the sequence of work and identifies significant task interdependencies required to meet the requirements of the program.

Structuring Schedules for Program Management: **The scheduling process defines the schedule hierarchy that must be established to ensure proper, effective planning and statusing of all effort on the program.**

Successful management requires the integration of the technical, schedule, and cost aspects of the program. Schedules that result from this integration show the planned time required accomplishing the technical scope of the contract. When projects experience problems in technical performance, either schedule delays, cost problems, or both may follow. An adequate scheduling system will facilitate the depiction of the plan to accomplish the technical scope, the actual technical progress against that plan, and estimates of the time required completing the remaining technical scope. The schedule baseline, progress, and estimated time to complete all should readily integrate with the financial depiction (budgets, earned value, and estimate cost to complete) of the technical scope.

The scheduling system should contain a master schedule and related subordinate schedules that provide a logical sequence from the detail to the summary level. Intermediate schedules should be established if needed to provide a logical sequence from the detail level schedule to the master program schedule. The scheduling system must also provide for the interdependencies between organizations and/or WBS elements at the level appropriate for efficient program management.

Documents to Review: **Schedule Trace, Program Schedules.**

1. **The scheduling system contains a program master schedule reflecting contractual requirements, significant decision points, and key program milestones.**

2. **Subordinate schedules provide a logical link from the level where work is being performed to the program master schedule and provide for program interdependencies as necessary (vertical dependency).**

3. **The schedules provide for identification of product-oriented interdependencies supporting completion of contractual effort (horizontal dependency).**

Guideline #7 - PLANNING & BUDGETING, Process Group - Scheduling:

Scheduling shall identify physical products, milestones, technical performance goals, or other indicators that will be used to measure progress.

Incorporate Meaningful Progress Indicators: **The scheduling system should cover all specified work and incorporate program milestones that are meaningful in terms of the technical requirements of the contract. It should provide schedules such that actual progress can be related to the plan and contain forecasts of expected future progress. Such schedules should identify key milestones and activities that recognize significant constraints and relationships. A key feature of the scheduling system is that it establishes and maintains the relationship between technical achievement and progress status.**

Documents to Review: **Schedule Trace, Program Schedules, and Manager Interview Results.**

1. **The use of meaningful indicators to measure actual work progress forms the basis for higher-level schedule status.**

Guideline #8 – (DCAA, PART 1) Planning & Budgeting, Process Group - Indirect Management:

Establish and maintain a time-phased budget baseline, at the control account level, against which program performance can be measured. Budget for far-term efforts may be held in higher level accounts until an appropriate time for allocation at the control account level. Initial budgets established for performance measurement will be based on either internal management goals or the external customer negotiated target cost including estimates for authorized but undefinitized work.

Include Indirect Budgets in the Performance Measurement Baseline (PMB): **The PMB should include indirect budgets. Budgets should be included in the time-phased control account budgets, summary level planning packages, or undistributed budget. Irrespective of the level at which indirect budgets are allocated or assigned to the project, average indirect rates for the life of the contract or control account, may cause too much distortion in cost performance.**

Documents to Review: **Control Account Plan, Summary Planning Documentation, Internal Time-Phased Baseline Documents.**

1. **The performance measurement baseline contains budgets for indirect costs at the level appropriate for project and/or supplier management.**

Guideline #8 – (PART 2) PLANNING & BUDGETING, Process Group - Work/Budget Authorization:

Establish and maintain a time-phased budget baseline, at the control account level, against which program performance can be measured. Budget for far-term efforts may be held in higher level accounts until an appropriate time for allocation at the control account level. Initial budgets established for performance measurement will be based on either internal management goals or the external customer negotiated target cost including estimates for authorized but undefinitized work.

Baseline Establishment: **This process addresses the requirements for the project organization to integrate budget and work planning requirements with the program schedules to ensure completion of contractual efforts. The assignment of budgets to scheduled segments of work produces a plan against which actual performance can be compared. This is called the performance measurement baseline (PMB). The PMB should be in place as early as possible after authorization to proceed. The relationship of individual work tasks with the time-phased resources necessary to accomplish them is**

established at the control account level. When practicable, all control accounts should be planned, at least at a summary level, to the end of the contract.

Documents to Review: Control Account Plan, Work Authorizations Documents, Summary Planning Documents, Internal Time-Phased Baseline Documents.

1. **The program baseline is the summation of the time-phased budgets for all the control accounts and summary level planning packages plus applicable indirect budgets and any undistributed budget.**

2. **The performance measurement baseline is a representation of the current program plans. Proper maintenance of the baseline will prevent performance measurement against an outdated or unauthorized plan.**

3. **For management reasons, a project may elect to establish a program budget that exceeds the program target costs. The customer will be consulted prior to implementation of the change.**

Guideline #9 - PLANNING & BUDGETING, Process Groups - Organizing, Work/Budget Authorization, Material Management, and Subcontract Management:

Establish budgets for authorized work with identification of significant cost elements (labor, material, etc.) as needed for internal management and for control of subcontractors.

Authorize Responsible Organization to Proceed with Work: Before work can proceed, scope and budget must be authorized to the responsible organizations. The contractor's program manager is given an internal authorization to proceed with contract work. Budgets and work scope then are divided among the program organizations. All authorized work must be associated with a corresponding budget.

Authorizing Work and Budgets to the Responsible Organization: Concurrent with the baseline process, the work authorization system should define and identify the work to be done by responsible organizational elements. Budget values, representing the time-phased valuation of the resources authorized to complete the assigned work, are also assigned to the responsible organization. Schedules and budgets should be established and approved for all authorized work at the level determined most appropriate by the contractor.

Establish Work Packages for Budgeted Material Items: The control account budget should include all direct costs for the authorized work with separate identification of cost elements (labor, material, other direct costs). Budgets should be based on defined/expected quantities of material items necessary to meet the requirements of the project. The Bill of Material (BOM) for a project is normally the basis for establishing material budgets.

Schedules for the Authorized Subcontracted Effort: **One aspect of schedule integration that provides unique problems is the integration of subcontractor schedule information into the prime contract schedule. This integration should be accomplished in a manner that provides an accurate depiction of the impact of subcontractor performance on the project schedules.**

Budget for the Authorized Subcontracted Effort: **The identification of budgets for subcontracted items is a result of establishing the requirement for the item to be procured as a subcontract rather than purchased as a material item. This involves identification of the subcontractor, the establishment of an estimated value for the subcontract, and ultimately negotiating the subcontract scope, schedule and budget. During this process, the prime contractor establishes a baseline for the effort at the control account level. During negotiations, the baseline values will normally be based on the prime contractor's estimate for the work as opposed to the subcontractor's proposal values. Once negotiations are complete, budgets are normally adjusted to reflect the negotiated value of the subcontract. Any other value used must be supportable.**

When a subcontractor is required to provide an external performance report, subcontractor data will be provided to the prime contractor for performance measurement purposes. If a subcontractor is not required to provide earned value information, the prime contractor should establish procedures, which provide schedule and technical plans and progress reports, as needed, for overall project management.

Documents to Review: **Work Authorization Documents for Organizational Elements, Control Account Plans, Work/Budget Authorizations, Material Control Account Plans, Bill of Material,**
Subcontract Control Account Plans, BCWS Supporting Documentation, and Program Schedules.

1. **Early authorization for project management to proceed with the effort and to commit company resources.**

2. **A process for establishing organizational authority to proceed with project effort through the expenditure of resources at the control account level.**

3. **A resource plan is the time-phased budget which is developed at the control account level in accordance with assigned work scope and schedule requirements (due dates) and stated in terms of direct labor hours, and/or dollars or ODC.**

4. **Authorization to proceed with work should correlate as closely as possible to the actual commencement of that effort.**

5. **Budgets assigned to control accounts for material requirements are properly planned and supported by material requirement documents.**

6. **Material budgets are time-phased in support of internal schedule requirements.**

7. **Budgets assigned to control accounts for subcontracted items are planned and supported by time-phased information from the subcontractor.**

8. **Time-phased control account budgets for the subcontractors will support internal and contractual schedule requirements**

Guideline #10 - PLANNING & BUDGETING, Process Groups - Organizing, Work/Budget Authorization, Material Management, and Subcontract Management:

To the extent it is practical to identify the authorized work in discrete work packages, establish budgets for this work in terms of dollars, hours, or other measurable units. Where the entire control account is not subdivided into work packages, identify the far term effort in larger planning packages for budget and scheduling purposes.

Assignment of Performing Organizations: Work packages are natural subdivisions of control accounts and constitute the basic building blocks used in planning, controlling, and measuring project performance. A work package is simply a low-level task or job assignment. It describes the work managed by a specific performing organization and serves as a vehicle for monitoring and reporting work progress. Effective control and completion of the work requires that each work package be assigned to only one performing organization. Establishing and maintaining control at the Control Account level permits flexibility in the management of resources at the lower detail levels through work package re-planning.

When effort at the control account level cannot be adequately defined into work packages, the contractor may retain budget and scope in a planning package. Work for a given cost account which cannot be planned in detail at the outset, should be divided into larger segments and placed into planning packages within the cost account. This package must be assigned to an organization for maintenance and for detail planning into work packages at the earliest possible time.

Distribute the Control Account Effort into Work Packages and Planning Packages: Effort contained within a cost account is distributed into either work packages or planning packages.
Work packages are single tasks assigned to a performing organization for completion. Work packages should be natural subdivision of cost account effort. Each work package should result in a definable end product or event. When work packages are relatively short, little or no assessment of work-in-process is required. As work package length increases, work-in-process measurement becomes more subjective, unless work packages are subdivided by objective indicators, such as discrete milestones with pre-assigned budget values or completion percentages.

Tie Work Package Budgets to Information in Supporting Systems: When progress will be measured through the use of a standards-based performance measurement system, a direct relationship between the standards planned and the budget for the associated effort must be established.

The contractor must establish a baseline plan for manufacturing work, which includes time-phased budgets that are consistent with the schedules for the performance of the work. The performance measurement indicators (milestones, earned standards, scheduled output, etc.) must be clearly identified and directly related to control accounts. These indicators must clearly represent the accomplishment of an identifiable quantity of work within the cost account and be assigned a value reflecting the planned cost of that work. These values must summarize to or reconcile with the total budget for the cost account.

Establish Work Packages for Budgeted Material Items: The establishment of materia work packages for developmental material and production material can differ significantly. In a developmental effort, most material is consumed by the engineering organization in the design and testing of potential hardware items. These work packages may be established within the same control account as the labor that will consume the material. Planning packages should be established for developmental type material items, that when design wor has not progressed sufficiently, permit adequate definition of parts required. The budgets for these planning packages should be substantiated and segregated in some manner in order to ensure that budget designated for material procurement is not inadvertently used for other requirements.

In a production environment, material work packages may be established in material-only control accounts. These accounts are summarized into the appropriate WBS and/or organizational elements related to the hardware items being produced. Flexibility should be allowed in the planning of production material work packages, as long as the budgets accurately represent the manner in which the material is planning to be received, accepted, issued to work-in-process, or consumed.

Planning of material budgets for both development and production should coincide with the occurrence of events that show physical progress.

Work Packages for Subcontracted Effort: Work packages may be established within subcontract cost accounts to provide for separation of subcontract activities for performance measurement purposes. The prime contractor must be able to support the values established within each work package using either subcontractor-supplied information or internal documentation. These work packages must be related to the plan established by the subcontractor to complete efforts on the subcontracted items.

Documents to Review: Control Account Plans, Manager Interview Results, Work Authorizations Documents, Program Schedules, Manufacturing Control Account Plans, Internal Factory Standards Planning Documents, Internal BCWS Reports.

1. **Work packages are established for identified tasks and assigned to a contractor organization for performance. A work package is a natural subdivision of the control account and reflects the actual way in which the work will be performed.**

2. **Ideally, a single contractor organization (functional, matrix, IPT, etc.) is given responsibilit for completion of identified work packages.**

3. **A work package is a natural subdivision of the control account and reflects the actual way in which the work will be performed.**

4. **Detail work packages contain objective indicators/milestones to minimize subjectivity in progress assessment**

5. **A planning package is a holding account (within a control account) for budget for future work that is not yet practical to plan at the work package level. The planning horizon for this effort will be based on project management needs.**

6. **Earned value management using standard hour methods is commonly employed in manufacturing organizations. It is scheduled and tracked on the basis of physical accomplishment. The techniques applied include the usage of learning curves and realization factors for planning and performance measurement.**

7. **Apportioned effort is work for which the planning and progress is tied to other discrete efforts. The budget for the apportioned account will be time-phased in relation to the resource plans for the base account.**

8. **The relationship between the discrete effort and apportioned effort is consistent throughout the period of the affected control account.**

9. **A material work package is a natural subdivision of the control account and reflects the actual way in which the work will be performed, contains adequate objective indicators/milestones to minimize subjectivity, and is a meaningful product or management-oriented subdivision of a higher level element of work (control account).**

10. **A material planning package is a holding account (within a control account) for budget for future work that is not yet practical to be planned at the work package level. The planning horizon for this effort will be based on project management needs.**

11. **The contractor should be able to substantiate material work package and planning packag budgets in terms of requirements to support project objectives and plans.**

12. **Work package and planning package budgets for subcontractors represent the subcontractor's plan for supporting contract effort and are based on subcontractor and/or in-house documentation.**

Guideline #11 - PLANNING & BUDGETING, Process Group - Work/Budget Authorization:

Provide that the sum of all work package budgets plus planning package budgets within a control account equals the control account budget.

Verification of Control Account Budgets: All control accounts must contain a budget, schedule, and scope of work and should realistically represent the manner in which work is

assigned and budgeted to the organizational units. In all cases, the value of the budget assigned to individual work packages and planning packages within the control account must sum to the total value authorized for the control account.

Documents to Review: Control Account Plans, Internal Performance Measurement Documents.

1. **The sum of all work package budgets and planning package budgets within a control account will equal the total budget assigned to the control account.**

Guideline #12 - PLANNING & BUDGETING, Process Groups - Work/Budget Authorization, Material Management, and Subcontract Management:

Identify and control level-of-effort (LOE) activity by time-phased budgets established for this purpose. Only that effort which is not measurable or for which measurement is impractical may be classified as LOE.

Planning and Control of Level-of Effort (LOE) Activities: For discrete work packages accomplishment can be measured based on the completed pieces of work but level-of-effort (LOE) is "measured" through the passage of time. LOE activity should be separately identified from discrete work packaged effort to avoid distorting that, which is measurable.

LOE should be held to the lowest practical level. LOE budgets should be separately substantiated and planned as direct labor, material/subcontract, or other direct costs. LOE activity should be budgeted on a time-phased basis for control and reporting purposes. Small amounts of LOE and discrete effort may be mixed within the same control account, however the control account manager must ensure visibility into the performance of the discrete effort.

Documents to Review: Control Account Plans, Manager Interview Results, Subcontract Control Account Plans, Subcontract Scope of Work Description, Subcontract Manager Interview Results.

1. **LOE is work scope of a general or supportive nature for which performance cannot be measured or it is impractical to measure. There is no definable end product.**

2. **Discrete effort and LOE should be separately evaluated to ensure the integrity of performance measurement data.**

3. **Material items are appropriately planned in discrete, apportioned, or LOE control accounts.**

4. **High-dollar value or critical material items should be discretely tracked to ensure their availability to support program needs.**

5. **Subcontract control accounts planned as LOE, will be supported by other management processes to allow project visibility into the work being performed by the subcontractor.**

6. **Subcontractor LOE budgets are appropriately separated from the prime's LOE budgets to avoid distortion of performance measurement information.**

Guideline #13 (DCAA) - PLANNING & BUDGETING, Process Group - Indirect Management:

Establish overhead budgets for each significant organizational component of the supplier for expenses, which will become indirect costs. Reflect in the program budgets, at the appropriate level, the amounts in overhead pools that are planned to be allocated to the program as indirect costs.

Correlate Indirect Budgets with Project Activities: **Realistic time-phased budgets and forecasts for indirect costs must be established by organization. The supplier should apply the most appropriate indirect rates so that a valid PMB can be established. Indirect budgets should be reviewed at least annually or when major changes are identified in factors affecting indirect costs.**

Documents to Review: **DCAAM 7640.1, FAR 31.203, Organizational Charts, CAS Disclosure Statement, Supplier's Overhead Policies and Procedures.**

1. **Projected indirect costs, CWBS an organizational levels, are established by a rational, traceable budgeting process.**

2. **The supplier's CAS Disclosure Statement defines the content and processes of the supplier's indirect management process. It normally includes a definition of indirect expenses, overhead pools are described and each item of cost assigned to each overhead pool.**

3. **A methodology will exist for the application of overhead rates to a contract that will cover the period of performance for the contract.**

4. **Projected indirect rates are adjusted in a timely manner to reflect changes in (a) the current or projected base, (b) the level of overhead expenditures, and (c) the overhead structure. The EVMS normally will use the most current overhead rates to establish the PMB.**

Guideline #14 - Planning & Budgeting, Process Group - Work/Budget Authorization:

Identify management reserves and undistributed budget.

Establish and Track Management Reserve (MR): **In most projects, particularly developmental activities, there is considerable uncertainty regarding the timing or magnitude of future difficulties. The use of MR provides the project manager with a capability to adjust for these uncertainties. Adequate identification and control of MR is**

necessary. MR budget and its use should always be accounted for at the total project level. Normally, it is retained and controlled at this level, although in some cases it might be distributed to and controlled at lower management levels. In any event, MR is maintained separately from undistributed budget. There is no such thing as "negative management reserve".

Management reserve is not a contingency, which can be eliminated from contract price during subsequent negotiations or used to absorb the cost of contract changes. The contractor should not be required to use existing MR to provide budgets for authorized, but undefinitized, work or other modifications to authorized contractual efforts.

Establish and Track Undistributed Budget (UB): Budgets applicable to contract effort which cannot be specifically identified to a WBS or organizational elements in a timely manner are referred to as UB. The establishment of UB may be necessary when project changes are authorized too late in an accounting month to be distributed in that month. The budget should be distributed to an appropriate WBS or organizational elements and control accounts as quickly as possible.

For authorized work, which has not been negotiated, the project may maintain budgets in the UB account until negotiations have been concluded, allocating budget only to that work which will start in the interim. After negotiations, the remaining budget should be allocated appropriately.

Documents to Review: Budget Records (including MR and UB records)

1. **Management reserve is held for work scope growth, rate changes, and other program unknowns.**

2. **A project should be able to account for all management reserve at the total contract level.**

3. **Undistributed budget is budget that is associated with a defined scope of work not allocated either to control accounts or summary level planning packages.**

4. **A project should be able to account for all undistributed budgets at the total contract level.**

Guideline #15 - Planning & Budgeting, Process Group - Work/Budget Authorization:

Provide that the program target cost goal is reconciled with the sum of all-internal program budgets and management reserves.

Reconcile Budget Values to Contract Cost: After contract negotiations are completed, the total allocated budget (TAB) used to report project performance must always represent the contract budget base (CBB) value (or OTB, if approved). This is to force

recognition of contractual requirements and to preclude undisciplined changes to the performance measurement baseline (PMB). TAB = CBB.

Total allocated budget (the PMB plus MR) equals the authorized contract target cost plus the estimated cost of authorized but unpriced work.

Documents to Review: Budget Records External Reports, Contractual Instruments, Internal Performance Measurement Reports.

1. **The initial program budget is normally tied directly to the negotiated contract cost or estimated negotiated cost. The program budget, at any level and for any organization or task, will only contain budget for specific authorized work.**

2. **The program baseline is the summation of the time-phased budgets for all of the control accounts and summary level planning packages plus applicable indirect budgets and any undistributed budget. Management reserve is not included in the performance measurement baseline, as it has not been allocated to specific work scope.**

Guideline #16 – (DCAA) ACCOUNTING, Process Groups - Accounting & Subcontract Management:

Record direct costs in a manner consistent with budgets in a formal system controlled by the general books of accounting.

Establish an Accounting System Interface with the Earned Value Management System: The accounting system must be capable of accounting for all resource expenditures on an "applied" basis (i.e., on an "as-used" or "as-consumed" basis). This requirement creates few difficulties in the categories of direct labor (where time cards or other time measurement devices are used) or other direct charges (where services are rendered on some type of dollars per-unit basis). In the area of material accountability, there is considerable variation among the respective processes of accounting for material usage. Recognizing the absence of uniformity in material methodologies, the CAS provides relaxed interpretations as to what constitutes an "applied" basis of material accounting, as well as alternatives for acceptance on an "other-than-applied" basis.

Establish a Capability to Track Costs for Apportioned Effort: The system should ensure that actual costs for effort identified as apportioned effort are collected properly so that valid comparisons to the budgets for the apportioned effort may be made.

Documents to Review: Supplier's Accounting Manual, Disclosure Statement, Generally Acceptable Accounting Procedures (GAAP), Internal and External Performance Reports, Subcontractor Progress Payment Requests, and Subcontract Control Account Plans.

1. **The supplier's accounting system provides a basis for auditing records of all direct costs that can be charged to the contract.**

2. **The supplier's accounting system collects actual direct costs and assigns these costs to control accounts on the same basis budgets were established.**

3. **The supplier's subcontract management process should include the following capabilities:**

    a) **Subcontract costs are being reported within the same accounting period as the associated earned value.**

    b) **Where subcontract actuals are not available, estimated actuals are used.**

    c) **Where progress payments are made to the subcontractor, reconciliation to reported earned value, i.e., progress is made.**

    d) **If the subcontractor supports multiple CWBS elements, methodologies are in place to assign actual costs to the appropriate elements, including overhead, G & A, MR, and profit/fee.**

Guideline #17 – (DCAA) ACCOUNTING, Process Group - Accounting:

Summarize direct costs from control accounts into the work breakdown structure (WBS) without allocation of a single control account to two or more WBS elements.

Ensure Accurate Summarization Through the WBS: Allowable costs collected within the control account by element of expense must summarize from the control account level through the WBS used to the top level without being allocated to two or more higher-level elements. A carefully developed WBS and a corresponding cost collection structure should prevent any single element's data from being summarized to multiple higher-level elements. This does not preclude the allocation of costs from a control account obtaining common items or services to the appropriate using control accounts.

Documents to Review: Internal Performance Measurements Reports, CPR, and CWBS.

1. **The project established cost-charging structure would ensure that actual costs are collected so that direct comparison with associated budgets can be made at the appropriate WBS level(s).**

Guideline #18 – (DCAA) ACCOUNTING, Process Group - Accounting:

Summarize direct costs from the control accounts into the contractor's organizational elements without allocation of a single control account to two or more organizational elements.

Ensure Accurate Summarization Through the OBS: The same requirement for accurate cost summarization (Guideline #17 above) applies to the project organization as well. The integrity of the data summarization begins at the control account level through

the project structure to the highest-level organizational element without costs being allocated to two or more higher-level elements. This does not preclude the allocation of costs from a control account obtaining common items or services to the appropriate using cost accounts. Again, a carefully developed project structure and cost collection structure will assure accurate data summarization for management use.

Documents to Review: Internal Performance Measurements Reports, OBS, External Reports.

1. **The project established cost-charging structure would ensure that actual costs are collected so that direct comparison with associated budgets can be made at the appropriate organizational level(s).**

Guideline #19 – (DCAA) ACCOUNTING, Process Group - Indirect Management:

Record all indirect costs, which will be allocated to the contract.

Collect Actual Indirect Costs for Allocation to Individual Contracts: Overhead costs represent expenses, which benefit more than a single contract. The accounting process should record all allocable indirect costs consistent with the provisions of the supplier's disclosure statement. The supplier's procedures and/or EVMS description should specify the level at which indirect cost information will be allocated to individual contracts.

Documents to Review: CASB Disclosure Statement, DCAA Audit Reports, Organizational Charts, and Accounting Manual.

1. **The supplier's accounting system provides for the summarization of indirect costs from the point of allocation through the CWBS and OBS to the total contract level.**

2. **Overhead rates are updated frequently enough to ensure a realistic monthly allocation of indirect costs without significant adjustments to performance measurement information.**

Guideline #20 – (DCAA) ACCOUNTING, Process Group - Accounting:

Identify unit costs, equivalent unit costs, or lot costs when needed.

Unit/Lot Costs: The supplier may be required to account for the production of material items in a manner that facilitates development of unit costs, equivalent unit costs, or lot costs. This is normally a requirement of contracts where multiple units are being produced in a production or production-like environment.

There are acceptable alternatives to unit cost for specific circumstances unique to the production environment. When production effort occurs on an accelerated assembly line basis, it may not be practical to determine the cost of individual units. In such situations, it is sufficient to accumulate "lot" costs, where a lot is an aggregate of a specified and

consistent number of units. In those situations, where production line effort yields substantially comparable units for more than a single customer, it is also difficult to establish the cost of specific units. It is sufficient under these circumstances to establish "equivalent unit costs" based on the assumption that, all things being alike, on a "mature" production run each unit's cost is approximately equal to every other unit's cost.

Documents to Review: Charge Number Structure, Contract Data Requirements, and Accounting Manual.

1. **When required by the contract, the supplier's accounting system must be capable of accumulating actual cost by unit or lot, as appropriate.**

2. **The supplier's accounting system may also be capable of separating actual costs into recurring and non-recurring categories, when required by the contract.**

Guideline #21 – (DCAA) ACCOUNTING, Process Group - Material Management:

For EVMS, the material accounting system will provide for:

(1) Accurate cost accumulation and assignment of costs to control accounts in a manner consistent with the budgets using recognized, acceptable, costing techniques.

(2) Cost performance measurement at the point in time most suitable for the category of material involved, but no earlier than the time of progress payments or actual receipt of material.

(3) Full accountability of all material purchased for the program including the residual inventory.

Account for Material Purchased for the Project: Acceptable-costing techniques should be used to fully account for all material purchased for the project. To ensure effective performance measurement of material takes place, the supplier's accounting system should have the following characteristics:

(1) An accurate cost accumulation system, which assigns material cost to appropriate control accounts in a manner consistent with the budget. Actual costs for material items should be reported in the same accounting period that earned value is taken for the material to facilitate management analysis.

(2) Where actual costs are not available in a timely manner, assign estimated costs to the material item and make adjustments when actuals are recorded in the accounting system. This may be done outside of the accounting system as long as the project is able to reconcile this value to the accounting system actuals.

(3) Account for all material and purchased parts in a manner appropriate to their value and significance.

Documents to Review: Material Trace, Internal Performance Reports.

1. **The supplier's material control procedures should include the following requirements:**

   a) **Material costs (normally on an applied basis) are being reported within the same accounting period as the associated earned value.**

   b) **Cost performance for material occurs at the point of time most suitable for the type of material involved, but no earlier than point of receipt.**

   c) **All materials purchased for the contract are fully accounted for (including residual inventory).**

2. **The supplier should be able to determine unit, equivalent unit, and lot costs by type and amount of material, as necessary.**

Guideline #22 – (DCAA, PART 1) ANALYSIS and MANAGEMENT REPORTS, Process Group – Accounting,

At least on a monthly basis, generate the following information at the control account and other levels as necessary for management control using actual cost data from, or reconcilable with, the accounting system:

Use Accounting Systems Actuals for Variance Analysis: It is essential that all actual costs used for variance analysis come directly from, or be reconcilable with, the accounting system. In some cases, it may be necessary to use "estimated actuals" to avoid artificial variances that might be created by the time lag costs being recognized by the accounting system. The EVMS will use actual cost data from the supplier accounting system as appropriate for accurate reporting of program performance.

Documents to review: Internal performance reports, Variance analysis documents, Accounting System data.

1. **Comparison of the amount of planned budget and the amount of budget earned for work accomplished. This comparison provides the schedule variance.**

2. **Comparison of the amount of budget earned with the actual (applied where appropriate) direct costs for the same work. This comparison provides the cost variance.**

Guideline #22 – (PART 2) ANALYSIS and MANAGEMENT REPORTS, Process Groups – Organizing, Work/Budget Authorization, Managerial Analysis, Material Management, and Subcontract Management:

At least on a monthly basis, generate the following information at the control account and other levels as necessary for management control using actual cost data from, or reconcilable with, the accounting system:

Appropriate Technique for Assessing Progress: To ensure valid comparisons of scheduled effort and actual costs to earned value, it is important that an appropriate technique for assessing progress be established for each segment of work. Objective methods should be used where practicable.

Documents to Review: Control Account Plans, Variance analysis documents, Internal Performance Measurement Reports.

1. **Comparison of the amount of planned budget and the amount of budget earned for work accomplished. This comparison provides the schedule variance.**

2. **Comparison of the amount of budget earned with the actual (applied where appropriate) direct costs for the same work. This comparison provides the cost variance.**

Guideline #23 – ANALYSIS and MANAGEMENT REPORTS, Process Groups – Scheduling, Managerial Analysis, Material Management, Subcontract Management:

At least on a monthly basis, identify the significant differences between both planned and actual schedule performance and planned and actual cost performance, and provide the reasons for the variances in the detail needed by program management.

Evaluate Deviations from the Plan: Scheduling should interface with other elements of the EVMS to the extent necessary for measurement and evaluation of project status. The scheduling system should provide current status and forecasts of completion dates for all authorized work. The summary and detailed schedules should enable a comparison of planned and actual status of project accomplishment based on milestones or other indicators used for control purposes.

Analyze Significant Variances at the Control Account Level: Analysis of deviations from planned activities provide management with visibility into needed actions to either return the project to plan or compensate for these deviations in cost, schedule, or technical areas.

1. **Significant Variances: Establish reasonable selection criteria to ensure proper analysis of all significant problems and not cause an excessive burden on the control account and mid-level managers. Use of meeting notes, minutes, or other material generated as normal function of the management process supports this analysis. The selection criteria should ensure all significant variances are analyzed and any external reporting requirements are supported.**

2. **Schedule Variances (SV):** **Comparing the value of work completed to the value of work scheduled during a given period of time provides a valuable indication of schedule status in terms of dollars worth of work accomplished. This variance may not, however, clearly indicate whether or not scheduled milestones are being met since some work may have been performed out of sequence or ahead of schedule. Schedule variance does not indicate whether a completed activity is a critical event or if delays in an activity's completion will affect the completion date of the contract. A formal time-phased scheduling system, therefore, must provide the means of determining the status of specific activities, milestones, and critical events.**

3. **Cost Variances (CV):** **Comparisons of the cost of completed work with the value planned for that work provides a cost variance. Analysis of this difference reveals the factors contributing to the variance. Examples include poor initial estimate for the task, technical difficulties that required additional resources, the cost of labor or materials different than planned, differences between planned and actual rates, and personnel efficiency different than planned.**

4. **Variance at Completion (VAC):** **Comparisons of the total budget with the Estimate-At–Completion (EAC) at the control account level provides a variance expected at the completion of the control account. Control account managers need to be alert to circumstances which will affect the EAC and, therefore, the VAC. Managerial authority and responsibility for corrective action should exist at this level.**

5. **Required Analysis:** **Analysis of the SV, CV, and VAC are required at the control account level. Budgeting, measuring performance, and collecting costs by element of cost facilitates determining and reporting the reasons for significant variances in both the progress reviews and in the narrative portion of the external performance measurement report.**

Technical Achievment: **Unfavorable cost or schedule conditions are usually caused by technical difficulties. Quantitative information as to technical status is desirable and should be supplemented by narrative reports. As work progresses, determine the adequacy and quality of the work performed by making inspections, tests, or other types of technical measurements. If the results are satisfactory and no corrective action is required, the work proceeds. If, on the other hand, deficiencies are found, consider alternatives for corrective action; for example, redesign, scrap and remake, rework, etc. When considering these alternatives, the impact on cost and schedule must be weighed in addition to the technical considerations. After an alternative is selected, it may become necessary to plan the additional work in terms of new work packages or additions to existing unopened work packages and to change the schedules affected. In some cases the project manager may choose to provide additional budget to the responsible organization. Thus, there is a close relationship between technical achievement and its impact on cost and schedule.**

Analyze Material Variances at the Appropriate Management Level: **Budgets should be scheduled in accordance with a project event and earned when the event occurs. To avoid distortion, actuals should be recorded when the budget is earned. Analysis of variances for material accounts should focus on significant concerns. This may include usage incurred above or below the normal or exact quantities plus normal attrition amounts, as well as variances in the expected price of the material.**

1. **Material usage variance is an important cost factor on repetitive large volume, production type jobs. Acceptable techniques for analyzing and determining current and projected usage variances provide continuing internal measurement when the value and nature of the material warrant. Material systems plan and track material usage. For most projects, purchasing of material in excess of bill of material requirements is standard practice.**
   Planning for material usage allowance to cover scrap, test rejections, unanticipated test quantities, and the like, is a practical necessity, and the project should have records of such provisions. The more uncertain the expected usage the more important it is to have a good plan and to keep track of performance against it, particularly for project peculiar materials or materials which require long procurement lead-times. The identification of excess usage that is expected to continue for future units is key in validating project material quantities and requirements. Based on this analysis, appropriate action should be taken to ensure sufficient material is on hand/on order to complete contractual requirements.

2. **Material price variance is an essential element of material cost control. This can be determined early in the cycle of ordering materials, at which point the purchase order value of the materials can be compared with the amount budgeted for that material. Accumulation of these differences represents the total material price variance. When material prices vary from the amounts planned, the supplier should update the EAC as appropriate to show expected cost adjustments.**

Provide Effective Analysis of Subcontractor Performance: **Procedures established by the prime supplier for measuring the performance of the subcontractor must consider:**

1. **The establishment of a process whereby the prime supplier evaluates the management processes established by the subcontractor to perform the cost, schedule, and technical requirements of the subcontract when earned value reporting is required.**

2. **The requirement to review the subcontractor's performance report for accuracy and adequacy. This includes an independent analysis of the performance measurement information contained in the data formats of the report, an evaluation of the variance analysis information contained in the report, and an evaluation of management reserve usage, baseline changes, and manpower changes.**

3. **The capability to incorporate the subcontractor's management information, including analysis of significant variances, into the information submitted to the customer.**

During the time period between subcontract authorization to proceed and definitization, the prime supplier must make provisions to perform the above actions based on best available information.

Documents to Review: Schedule Trace, Schedule variance analysis documents, Variance analysis supporting documents, Results of Manager Interviews, Material Trace, Material variance analysis documentation, Internal material performance data, Subcontractor performance reports, Prime to subcontractor reconciliation's, Progress payment requests.

1. **The specific activities and events that contribute to the schedule variance can be identified in program schedules.**

2. **The schedule variance metric provides early insight into detail schedule conditions and overall schedules performance and should be used in conjunction with milestone status reports, critical path data, and other schedule status information for project management.**

3. **The supplier has a process for identifying and isolating the causes of favorable and unfavorable cost and schedule variances including material control accounts. (When significant amounts of material are involved, the supplier should be able to identify the price variance component of the material cost variance separately from the portion attributable to excess usage).**

4. **The level and extent of analysis of these variances will be a function of the way an individual supplier manages the projects.**

5. **The manager responsible for subcontractor performance will receive, review, and provide analysis of the subcontractor's performance measurement information.**

6. **Subcontractor performance measurement information must be properly integrated into the prime supplier's data.**

7. **The subcontractor manager ensures that earned value reported by the subcontractor reconciles to actual physical progress reflected in subcontractor progress payment requests.**

Guideline #24 – (DCAA) ANALYSIS, Process Group - Indirect Management:

Identify budgeted and applied (or actual) indirect costs at the level and frequency needed by management for effective control, along with the reasons for any significant variances.

Analyze Indirect Variances: The supplier's establishes controls to ensure actual indirect costs are compared to indirect budgets and this information should be shared with all affected programs. Specific control procedures should be implemented to ensure variances are identified, reported, and addressed by the appropriate level of management. Such controls increase the likelihood that potentially significant variances are communicated and considered in the development of the project EAC.

Documents to Review: Overhead Budgeting Policies and Procedures.

1. **The evaluation of variances between indirect budgets and costs will initiate management action to correct the causes of the variances.**

2. **Indirect variances will normally be recorded by element of expense.**

Guideline #25 – ANALYSIS, Process Group – Managerial Analysis:

Summarize the data elements and associated variances through the program organization and/or work breakdown structure to support management needs and any customer reporting specified in the contract.

Summarize Performance Data for Management Evaluation: Performance measurement information should be summarized directly from the appropriate level (control account or below) to provide both project status and organizational performance3 at all levels of management. This process provides supports an overall capability for managers to analyze available information and identify problem areas in sufficient time to take action. Because favorable variances in some areas are offset by unfavorable variances in other areas, higher level managers will normally see only the most significant variances at their level. The accumulation of many small variances that may add up to a large overall cost problem that is not attributable to any single major difficulty will also be evident.

Documents to Review: Variance analysis procedures and supporting documentation.

1. **The EVMS will accurately summarize budgets, earned value, and actual costs and the associated variances up through the CWBS and the supplier's organization.**

2. **Perform variance analysis for CWBS and organizations at levels above the control account in support of internal management needs and external customer requirements.**

Guideline #26 – ANALYSIS, Process Groups – Organizing and Managerial Analysis:

Implement managerial actions taken as a result of earned value information.

Organize for Effective Performance Measurement: The control account in an EVMS is the lowest levels in the structure at which the comparison of actual costs to planned budgets and earned value are required. The cost collection point must be at a level, which will identify the cost elements and factors contributing to cost and/or schedule variances. Managerial authority and responsibility for corrective action should exist at the control account level making it the key management control point in the system.

Summarize Performance Data for Management Evaluation: Performance measurement information should be summarized directly from the appropriate level (control account or below) to provide both project status and organizational performance at all levels of management. This process provides supports an overall capability for managers to analyze available information and identify problem areas in sufficient time to take action. Because favorable variances in some areas are offset by unfavorable variances in other areas, higher level managers will normally see only the most significant variances at their level. The accumulation of many small variances that may add up to a large overall cost problem that is not attributable to any single major difficulty will also be evident.

Documents to Review: Manager interview results, Internal data reports, Action item lists, Program status review documents, Cost Performance Report.

1. **Managers assigned responsibility for completing work segments are given authority commensurate with that responsibility.**

2. **Managers are provided control of assigned resources (ability to prioritize work) necessary to ensure work completion and the implementation of any corrective actions and/or work-around plans.**

3. **Managers at the control account, intermediate and program levels are involved in the evaluation of performance measurement data.**

4. **Corrective actions are initiated at the appropriate level and tracked to resolution.**

5. **Management data, to be of value, must be generated in a timely manner and be accurate.**

Guideline #27 – (DCAA, PART 1) ANALYSIS, Process Group - Indirect Management:

Develop revised estimates of cost at completion based on performance to date, commitment values for material, and estimate of future conditions. Compare this information with the performance measurement baseline to identify variances at completion

important to supplier management and any applicable customer reporting requirements including statements of funding requirements.

Insure Most Accurate Rates are Used to Project Indirect Costs: **The most current information should be used in preparing indirect rates, including historic experience, contemplated management improvements, projected economic escalation, and anticipated business volume. The use of these rates to generate indirect cost estimates will ensure a valid projection of project costs. Comparing indirect budgets to estimates of final indirect costs will reveal where significant differences occur. These variances must be analyzed to determine the cause and appropriate corrective actions.**

Documents to Review: **Rate Tables for EAC Valuation, Supporting Rational for Projected Rates.**

1. **To ensure the most accurate rates are used for EAC purposes, the supplier's system will base these rates: on historical experience; contemplated management improvements; projected economic escalation; and anticipated business volume.**

Guideline #27 – (PART 2) ANALYSIS, Process Groups – Organizing, Managerial Analysis, Material Management, Subcontract Management:

Develop revised estimates of cost at completion based on performance to date, commitment values for material, and estimate of future conditions. Compare this information with the performance measurement baseline to identify variances at completion important to supplier management and any applicable customer reporting requirements including statements of funding requirements.

Establish Organizational Responsibility for Resource Allocations: **Organizations, engaged in the performance contract effort, must periodically perform a comprehensive estimate of costs for the effort remaining. Project Management must periodically assess the sufficiency of resources versus the amount of work remaining. Responsibility for resource assignment to support program objectives must be clearly identified.**

Generate Periodic Estimates-At-Completion (EAC): **Periodically develop a comprehensive EAC at the control account level using all available information to arrive at the best possible estimate. This is done by:**

1. **Evaluating the efficiency achieved by performing organizations for completed work and comparing it to remaining budgets.**

2. **Establishing a schedule forecast that reflects the expected time frame for completing the remaining work.**

3. **Considering all remaining risk areas on the project versus cost avoidance possibilities.**

4. **Ensuring the most current direct and indirect rate structure is used to value the projected resources.**

5. **Applying this analysis to future efforts to derive the most accurate estimate.**

Comparison of this estimate to budgets for the associated effort must be made frequently enough for management to ensure project performance and resource availability will not be adversely impacted. Monthly maintenance of the control account level EAC by the control account manager ensures that the EAC continuously reflects a valid projection of project costs.

Provide Valid Estimates of Future Material Requirements: **The EAC process focuses on the control account manager (CAM). Information relative to price and usage variance should be used to support an update to the EAC. This provides timely notification to management of expected/incurred price changes which may affect future costs on the current project as well as future procurements. On production contracts, the evaluation of excess usage can lead to identification of increased material requirements necessary to maintain the production line at optimum capacity and to meet the contractual requirements.**

Generate EACs for Subcontracted Efforts: **The procedures relative to subcontract EACs should focus on two aspects:**

1. **The requirements that the subcontractor will generate an EAC as necessary to support program requirements and reporting to the customer.**

2. **The responsibility of the prime supplier to evaluate the subcontractor's EAC for adequacy and accuracy.**

Documents to Review: **System description, EAC procedure, Results of intermediate level manager interviews, Cost Performance Report, Internal performance measurement report, EAC supporting documentation, Subcontract estimate supporting documentation, Subcontractor performance reports.**

1. **Managers are required to coordinate resource requirements (positive and negative) with the providing organization as a result of EAC updates.**

2. **A supplier should periodically reassess the remaining requirements on a program, including material requirements, and maintain a most likely estimate of the cost to complete the program objectives, based on an assessment of: actual costs to date; commitment values for material items (if applicable); performance to date; knowledgeable projections of future performance; estimates of economic escalation.**

3. **The process of reassessment should focus on the control accounts, but must ensure that all resource requirements are considered.**

4. **Managers evaluate the estimate-to-complete (ETC) on a monthly basis, updating when required.**

5. **Program risk and potential cost avoidance areas are periodically assessed and there impact on contract cost estimates are communicated to the customer in program status reviews and/or external reports.**

6. **The current estimates of costs at completion are compared with corresponding budgets and the causes of variances are identified.**

7. **The results of the EAC process are communicated to the customer in reports and in funding documents to help assure that sufficient funding for the program is maintained.**

8. **Additional requirements for material items are properly coordinated with management and the material procurement organization.**

9. **Material budgets at completion are compared to estimates for material, causes of the variances are explained, and management action is taken.**

10. **Material EACs should be evaluated periodically and updated based on management needs and program procedures. This calculation includes the impact of unrecoverable price variances and additional material requirements due to excess usage.**

11. **Subcontract EACs should be based on:**

    a). Actual costs to date,

    b). Commitment values for subcontracted items,

    c). Performance to date as reported in the subcontractor's report and analyzed by the subcontract manager,

    d). Knowledgeable projections of future performance, and

    e). Estimates of economic escalation.

12. **The subcontract manager prepares an independent estimate of subcontractor costs and reports it to the customer as appropriate.**

13. **Subcontract budget-at-completion (BAC) (internal and external) is compared to estimates and causes of variance are explained**

Guideline #28 – REVISIONS, Process Group – Change Incorporation:

Incorporate authorized changes in a timely manner, recording the effects of such changes in budgets and schedules. In the directed effort prior to negotiation of a change, base such revisions on the amount estimated and budgeted to the program organization.

Customer-Directed Changes: **Customer-directed changes to the project can impact virtually all aspects of the internal planning and control system, such as organization structures, work authorizations, budgets, schedules, and EACs. The incorporation of authorized changes should be made in a timely manner and strictly controlled. This will ensure the Performance Measurement Baseline (PMB) can be accurately maintained.**

Documents to Review: **Contract change documentation.**

1. **Authorized changes should be incorporated in the Performance Measurement Baseline as soon as practical.**
2. **The incorporation of changes includes revisions to schedules, budgets, work authorizing documents, and any other appropriate changes (including appropriate retroactive changes) necessary to properly reflect authorized revisions.**
3. **Budgets for changes authorized, but not yet priced, are normally based on the suppliers resource plan for accomplishing the work. Near term budgets should be issued for performance measurement purposes.**

Guideline #29 – REVISIONS, Process Group – Change Incorporation:

Reconcile current budgets to prior budgets in terms of changes to the authorized work and internal planning in the detail needed by management for effective control.

Provide Traceability to Previous Budgets: **The original budget established for the project should constitute a traceable basis against which project growth can be measured. The starting point or base on which these original budgets are built is the project target cost. This value increases or decreases only as a result of authorized changes. For definitized changes, the project target cost changes by the negotiated amount. For authorized work which has not been negotiated, the project target cost increases by the amount of the cost estimated for that effort. Where a specified Not-to-Exceed (NTE) amount has been established, the project target cost will only increase by this amount unless both parties mutually agree to a different amount for performance measurement purposes. After negotiations, the project target cost is adjusted to reflect the negotiation results. Adequate records of all changes should be maintained to provide the basis for reconciliation back to the original budgets assigned during the baseline process.**

Documents to Review: **Budget revision records, Change control records, Manager interview results.**

1. **Internal adjustments to plans for future actions is a normal management process as things happen and situations change. It is important to ensure that overall program scope, cost, and schedule objectives are supported and retroactive changes are properly controlled to maintain the integrity of program performance data.**
2. **The supplier should be able to trace current budget values back to the original budget values for reconciliation to contract line item values, as necessary.**

Guideline #30 – (DCAA, PART 1) REVISIONS, Process Group – Accounting:

Control retroactive changes to records pertaining to work performed that would change previously reported amounts for actual costs, earned value, or budgets. Adjustments should be made only for correction of errors, routine accounting adjustments, effects of customer or management directed changes, or to improve the baseline integrity and accuracy of performance measurement data.

Control Retroactive Changes to Actual Costs: Retroactive adjustments to costs should only be made for routine accounting adjustments or for correction of errors. Any direct or indirect cost adjustments must be made in a timely manner in accordance with Generally Accepted Accounting Principles (GAAP).

Documents to Review: Journal vouchers, Accounting manual.

1. **The suppliers accounting system will provide for control over retroactive adjustments to actual costs to ensure management value of performance measurement information is not compromised**

Guideline #30 – (PART 2) REVISIONS, Process Group – Change Incorporation:

Control retroactive changes to records pertaining to work performed that would change previously reported amounts for actual costs, earned value, or budgets. Adjustments should be made only for correction of errors, routine accounting adjustments, effects of customer or management directed changes, or to improve the baseline integrity and accuracy of performance measurement data.

Control Internal Changes to the Performance Measurement Baseline (PMB): Future plans may significantly vary from the original baseline, and the project may choose to realign scope, schedule, or budget. Some examples of when it may be appropriate to do internal replanning (i.e., within the project target cost or approved Total Allocated Budget (TAB)) include:

1. **Changes resulting from a Preliminary Design Review (PDR) or a Critical Design Review (CDR) that modify future requirements;**
2. **A major shift in the resource profile to accomplish the remaining effort;**
3. **Funding requirements or modifications that affect future resource availability;**
4. **Rate changes that are significant enough to warrant replanning.**

Internal replanning is intended for the in-scope changes to the future budgets. The objective of internal replanning is to reflect a revised project plan. Changes to near term effort (effort scheduled to start in the next accounting period) must be minimized.

Control Account Replanning: Replanning of work packages within control accounts is sometimes necessary to compensate for internal conditions which affect the planning and scheduling of remaining work. Such replanning should be accomplished within the constraints of the previously established control account schedule and budget. When more extensive replanning of future is necessary and the total control account budget must be changed, management reserve may be used to increase or decrease the control account budgets. If replanning requires that work and associated budget be transferred between control accounts, this transfer must also be controlled.

Documents to Review: Authorized documents for retroactive budget adjustments, Manager interview results.

1. **A supplier must be able to make routine accounting adjustments and correct data errors, but it should also control changes to prior and current period data to prevent inappropriate changes from being made in the performance measurement information.**

2. **Corrections should be made if wrong data is significantly affecting the management value of the system, but, the validity and value of management reports will be compromised if current plans or program history (performance to date information) are constantly changing.**

Guideline #31 – REVISIONS, Process Group – Change Incorporation:

Prevent revisions to the program budget except for authorized changes.

Maintain Change Traceability: To maintain the validity of the Performance Measurement Baseline (PMB), discipline is mandatory throughout the organization, particularly in regard to budgetary control. Internal procedures should clearly delineate acceptable and unacceptable budget practices. These should include:

1. **Budgets are assigned to specific segments of work.**

2. **Work responsibility should not be transferred without transferring the associated budget.**

3. **A budget assigned to a future specific task should not be used to perform another task.**

4. **When Management Reserve (MR) is used, records should clearly indicate when and where it is applied.**

5. **When Undistributed Budgets (UB) exist, records should clearly identify their amount, purpose, and to which efforts budgets are issued.**

6. **Budgets, which are assigned to work packages, should not be changed once the effort is started unless the scope of work is affected by contractual change or project internal adjustments that enhance management of the effort.**

7. **Retroactive changes to budgets or costs for completed work or to schedules are not made except for correction of errors, normal accounting adjustments, revisions to budgets to reflect the formal negotiated value of completed tasks, or to improve the integrity and accuracy of the baseline.**

Documents to Review: Change control procedures, Budget logs.

1. **The supplier should ensure that changes to the Contract Budget Base (CBB) are limited to those authorized by contractual action.**

Guideline #32 – REVISIONS, Process Group – Change Incorporation:

Document changes to the Performance Measurement Baseline (PMB).

Correlate Internal Project Cost with the Contract Budget Base (CBB): The CBB, established based on the agreed-to value of authorized work, must be strictly controlled to maintain a valid basis for project performance. Changes to the CBB may only be made as a result of contractual changes. Procedures should ensure controls are in place to prevent inadvertent implementation of a baseline in excess of contract value.

Manufacturing Work Package Changes: A certain amount of rescheduling of open manufacturing work packages is appropriate and acceptable providing procedures exist which prevent the inadvertent invalidation of baseline schedules and budgets. The substance of such procedures should be to limit the range of rescheduling so as to maintain consistency with key production schedule dates. Key production schedule dates define the required completion dates for key elements of the manufacturing plan and are normally found on internal production schedules.

Documents to Review: Cost Performance Report (CPR), Budget logs, Change authorization documents.

1. **The Performance Measurement Baseline (PMB) should reflect the current program management plan for accomplishment of program objectives. If the maintenance of the baseline plans is compromised, the information on management reports will be degraded.**

2. **A supplier must be able to make routine accounting adjustments and correct data errors, but it should also control changes to prior and current period data to prevent inappropriate changes from being made in the performance measurement information.**